

## REMARKS

### I. PROSECUTION HISTORY OF PRESENT APPLICATION

The Applicant filed the present U.S. Patent Application Serial No. 09/980,466 ("Application") with the United States Patent and Trademark Office on November 30, 2001 claiming priority to PCT/IB99/00976 with a priority date of June 1, 1999. On March 11, 2005, the USPTO abandoned the Application due to an unintentional failure by the Applicant to reply within the set time limits on a Petition under 37 C.F.R. 1.47(b). The Applicant filed a Petition to Withdraw Holding of Abandonment under 37 C.F.R. 1.181 and a renewed Petition under 37 C.F.R. 1.47(b) which were subsequently granted on August 3, 2006. A Notice of Acceptance of the Application was mailed to the Applicant on January 29, 2007. The pending Application, which was filed over eight years ago, has had no further action since.

### II. REQUEST FOR ADVANCED OUT OF TURN EXAMINATION

MPEP §708.01 provides a list of special cases, which can be advanced out of turn for examination. The Applicant believes that at least two of these special cases apply to the present Application. First, applications that appear to interfere with other applications that have been previously considered and found to be allowable, or which will be placed in interference with an unexpired patent or patents, can be advanced. See MPEP §708.01 (F). As will be further discussed below, the present Application appears to interfere with other applications or unexpired patents (Dalvey I-VI). Second, Applications pending more than 5 years, including those which, by relation to a prior United States application, have an effective pendency of more than 5 years, can be advanced. See MPEP § 708.01 (I). As mentioned above, the present

Application has been pending for over eight years. Based upon these two special cases, the Applicant requests that the present Application be advanced for out of turn examination.

### III. REQUEST FOR INTERFERENCE WITH DALVEY I-VI

A formal Request for Interference under 37 C.F.R. §41.202 is filed concurrently herewith.

#### A. U.S. Patent No. 6,884,311 (hereinafter “Dalvey I”)

Dalvey I was filed on April 3, 2000, which is a continuation-in-part application of U.S. Patent Application No. 09/391,910 (now abandoned) filed on September 9, 1999. Dalvey I issued on April 26, 2005 with Claims 1-14. Applicant believes that Claims 1-14 in Dalvey I interfere with Applicant’s claimed subject matter in the present Application.

#### B. U.S. Reissue Patent Application Serial No. 12/218,260 (hereinafter “Dalvey I – Reissue”)

On July 11, 2008, Jodi Schwendiman, previously known as Jodi Dalvey, (co-inventor and assignee of Dalvey I) filed “Dalvey I – Reissue” for U.S. Patent No. 6,884,311 (Dalvey I). The reissue application was filed with a preliminary amendment to the Claims 1-14 of “Dalvey I-Reissue” and also an information disclosure statement containing additional prior art. A copy of the preliminary amendment is included in Exhibit I of the Request for Interference, which contains the amendments to “Dalvey I-Reissue”. As of December 5, 2008, no substantive examination of Claims 1-14 in “Dalvey I – Reissue” has occurred. The Applicant believes that Claims 1-14 of the preliminary amendment for “Dalvey I – Reissue” also interference with the Applicant’s claimed subject matter in the present Application.

C. U.S. Published Patent Application No. 2005/0048230 A1 (hereinafter “Dalvey II”)

Additionally, Applicant has also learned of U.S. Patent Application No. 10/911,429 entitled “ Method of Image Transfer on a Colored Base”” which was co-invented by and assigned to Jodi A. Dalvey. Dalvey II was filed on August 4, 2004, as a division of U.S. Patent Application No. 09/541,845, filed on April 3, 2000, now U.S. Patent No. 6,884,311 (Dalvey I), which was a continuation-in-part application of U.S. Patent Application No. 09/391,910 filed on September 9, 1999, now abandoned. Dalvey II published on March 3, 2005 as U.S. Published Application No. 2005/0048230. Dalvey II was originally published with Claims 1-20 listed in the published application. Subsequently, Claims 1-16 and 18 were cancelled. On March 25, 2008, the Dalvey II application received a Notice of Allowance for Claims 17 and 19-39. A copy of the allowed Claims is attached in Exhibit II of the Request for Interference. On June 25, 2008 an improper Request for Continued Examination (“RCE”) was filed by Dalvey. According to the Notice of Improper Request for Continued Examination dated July 10, 2008, “the request was not accompanied by a submission as required by 37 CFR 1.17(e) as required by 37 CFR 1.114. Since the application is not under appeal, the time period set forth in the final Office action or notice of allowance continues to run from the mailing date of that action or notice. Since an improper RCE will not toll the time period, Dalvey II must be abandoned. However, despite the improper RCE, Dalvey has continued prosecution after June 25, 2008 by filing subsequent amendments to the Claims on July 29, 2008, August 18, 2008, and November 24, 2008 (six months or more after the final Office Action dated February 18, 2008).

Regardless of the present status of Dalvey II, the Applicant believes that Claims 17, 19-26, 28-39, and 47-57 in Dalvey II, as disclosed in last amendment dated November 24, 2008,

interfere with Applicant's claimed subject matter in the present Application. In the event that Dalvey II has not been abandoned, the Applicant believes that the claims of Dalvey II as of November 24, 2008 interfere with Applicant's claimed subject matter in the present Application.

D. U.S. Published Patent Application No. 2008/0149263 A1 (hereinafter "Dalvey III")

The Applicant has also learned of U.S. Patent Application No. 12/034,932 entitled "Method of Image Transfer On A Colored Base" which was co-invented by and assigned to Jodi A. Dalvey (now known as Jodi A. Schwendimann). Dalvey III was filed on February 21, 2008, as a continuation of application no. 10/911,249 (Dalvey II), filed on August 4, 2004, which was a division of U.S. Patent Application No. 09/541,845, filed on April 3, 2000, now U.S. Patent No. 6,884,311 (Dalvey I), which was a continuation-in-part of application no. 09/391,910, filed on September 9, 1999, now abandoned. On June 26, 2008, Dalvey III was published as U.S. Published Application No. 2008/0149263 A1 with Claims 1-7. On August 18, 2008, an amendment to Dalvey III was filed listing Claims 1-23. As of December 5, 2008 no substantive examination of Claims 1-23 in Dalvey III has occurred. The Applicant believes that Claims 1-11 and 14-23 in Dalvey III interfere with the Applicant's claimed subject matter in the present Application.

E. U.S. Patent Application Serial No. 12/193,562 (hereinafter "Dalvey IV")  
U.S. Patent Application Serial No. 12/193,573 (hereinafter "Dalvey V")  
U.S. Patent Application Serial No. 12/193,578 (hereinafter "Dalvey VI")

Additionally, Applicant has also learned of U.S. Patent Application Serial Nos. 12/193,562 ("Dalvey IV"), 12/193,573 ("Dalvey V"), 12/193,578 ("Dalvey VI") which were filed on August 18, 2008 by the Applicant. Dalvey IV, V, and VI all claim the benefit of Dalvey

II and Dalvey III. Note, Dalvey II, for reasons stated above, may be abandoned. As of December 5, 2008, Dalvey IV, V, and VI have not been published or been issued so the actual contents of these filings is unknown. However, the Applicant believes that since Dalvey II and Dalvey III interfere with the Applicant's claimed subject matter in the present Application, then it is more than likely that Dalvey IV, V, and VI may also contain claims that interfere. Upon publication or issuance of Dalvey IV, V, and VI, the Applicant can review the subject matter and claims, and if necessary, further explain how the claims of Dalvey IV, V, and VI interfere with Applicant's claimed subject matter in the present Application. Note, Applicant will amend or add claims at the Examiner's suggestion to further support this request for a patent interference with Dalvey I-VI.

#### F. Brief Summary of Request for Interference

The Claims listed above in the present Application are nearly identical or substantially similar to Dalvey I-Reissue, Dalvey II, and Dalvey III. Dalvey discloses an image transfer sheet for transferring an image to a colored substrate, such as a T-shirt or other woven materials. A preferred embodiment is an image transfer sheet comprising an image transfer substrate, a release layer contacting the image transfer substrate, an image-imparting layer that comprises a polymer and indicia, wherein the release layer is impregnated with one or more of titanium oxide or other white pigment or luminescent pigment. Upon transfer of an image to a colored substrate, the image comprises a substantially white background or luminescent background and indicia.

Similarly, the present Application discloses a transfer print for transferring an image to a dark substrate, such as a T-shirt or other textiles. In one embodiment, the transfer print comprises: a carrier material, an adhesive layer contacting the carrier material, and an ink-

receiving layer that comprises a polymer that includes indicia wherein the adhesive layer is impregnated with one or more of titanium oxide or other white pigment or luminescent pigment. Upon transfer of an image to a colored substrate, the image comprises a substantially white background or luminescent background and indicia.

Dalvey I-Reissue, Dalvey II, and Dalvey III use slightly different terminology to convey the same thing as mentioned in the present Application. For instance, Dalvey I-Reissue, Dalvey II, and Dalvey III refer to a “release layer” wherein the present application correspondingly refers to an “adhesive layer”. Both the “release layer” and “adhesive layer” contain the same material, function the same way, and produce the same results so the only difference is in the terminology used. For clarification, the claim terms in Dalvey I-Reissue, Dalvey II, and Dalvey III are nearly identical or substantially similar to the terminology in the present Application in terms of material, function, and results. Further clarification of the identical or substantially similar claim terms is outlined below.

Claim Terms Comparison

<u>Dalvey I-Reissue/II/III</u>	<u>Present Application</u>
1. image transfer sheet	transfer print
2. image transfer substrate	carrier material
3. release layer	adhesive layer
4. image-imparting layer	ink-receiving layer
5. “one or more of titanium oxide or white background layer other white pigment or luminescent pigment”	white background layer

G. Claim Scope of “Release Layer”

Among the intrinsic evidence, "the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a

disputed term." Vitronics, 90 F.3d at 1582, 39 USPQ2d at 1576. "One purpose for examining the specification is to determine if the patentee has limited the scope of the claims." Watts v. XL Sys., Inc., 232 F.3d 877, 882, 56 USPQ2d 1836, 1839 (Fed.Cir.2000). For example, an inventor may choose to be his own lexicographer if he defines the specific terms used to describe the invention "with reasonable clarity, deliberateness, and precision." In re Paulsen, 30 F.3d 1475, 1480, 31 USPQ2d 1671, 1674 (Fed.Cir.1994). Such a definition may appear in the written description, see Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1388, 21 USPQ2d 1383, 1386 (Fed.Cir.1992), or in the prosecution history, see Vitronics, 90 F.3d at 1582, 39 USPQ2d at 1576 (citing Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1578, 38 USPQ2d 1126, 1129 (Fed.Cir.1996)).

The specification may limit the scope of the claims via other routes. The specification may assist in resolving ambiguity where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone. See Eastman Kodak Co. v. Goodyear Tire & Rubber Co., 114 F.3d 1547, 1554, 42 USPQ2d 1737, 1741 (Fed. Cir.1997), overruled on other grounds by Cybor, 138 F.3d at 1467, 46 USPQ2d at 1172. The patentee may demonstrate an intent to deviate from the ordinary and accustomed meaning of a claim term by including in the specification expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope. See SciMed Life Science Systems, Inc. v. Advanced Cardiovascular Systems, Inc., 242 F.3d at 1344, 58 USPQ2d at 1065 (Fed. Cir. 2001). In keeping with this clear legal precedent of interpreting the terms in accordance with the defined meaning within the specification, the term "release layer" is further analyzed below.

#### H. Definition of “Release Layer” In Dalvey I-Reissue/II/III

As stated above, the “release layer” of Dalvey I-Reissue/II/III is equivalent to the “adhesive layer” of the present application. For purposes of comparison, the definitions of the respective layers are applied below. Based upon the discussion below, the “release layer” of Dalvey I-Reissue/II/III and the “adhesive layer” of the present application are substantially equivalent.

#### I. Dalvey I-Reissue/II/III – Definition of “Release Layer”

Page 6, lines 24-48 defines the “release layer” in Dalvey I-Reissue, II and III. The silicon-coated layer 304 acts as a release-enhancing layer. When heat is applied to the image transfer sheet 104, thereby encapsulating image imparting media such as ink or toner or titanium oxide with low density polyethylene, ethylene acrylic acid (EAA), or MEAA, ethylene vinyl acetate (EVA), polyester exhibiting a melt point from 20 C up to 225 C, polyamide, nylon, or methane acrylic ethylene acrylate (MAEA), or mixtures of these materials in the substrate layer 302, local changes in temperature and fluidity of the low density polyethylene or other polymeric material occurs. These local changes are transmitted into the silicon coated release layer 304 and result in local preferential release of the low density polyethylene encapsulates, EVA, EAA, polyester, and polyamide. The silicon coated release layer is an optional layer that may be eliminated if the colored base 202 or peel layer is sufficiently smooth to receive the image. In instances where the silicon coated release layer 304 is employed, the silicon coated release layer may, for some embodiments wherein the release layer performs image transfer, such as is shown in FIG. 3b, also include titanium oxide particles or other white pigment or luminescent pigment in a concentration of about 20% by volume.



#### J. Present Application – Definition of “Adhesive Layer”

Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material – preferably a hot melt layer- which comprises dispersed spherical (globular) polyester particles of granular size of less than 30 um. Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily affects adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30 um are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer. Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot—melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot—melt since said hot—melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner. Page 14, lines 3-24 discloses a hot—melt layer which is preferably used in the ink—jet transfer system according to the present invention as adhesive layer is directly on the

removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.

#### K. Conclusion

In order to provoke an interference with Dalvey I- Reissue, II and III, Applicant has filed this Preliminary Amendment to add new Claims 45-58 for Dalvey I-Reissue, Claims 59-90 for Dalvey II, and Claims 91-113 for Dalvey III.

Also filed contemporaneously with this Preliminary Amendment is a Request for Interference, which suggests a patent interference with Dalvey I - Reissue, II, and III according to the requirements of 37 CFR 41.202.

#### IV. STATUS OF THE CLAIMS

##### A. Claims 1-16

Original Claims 1-16 were previously cancelled in a Preliminary Amendment dated November 30, 2001.

##### B. Claims 17-36

Previously Presented Claims 17-36 were submitted in the Preliminary Amendment dated November 30, 2001.

##### C. Claims 37-44

New Claims 37-44 are added by this preliminary amendment. Claims 37-44 are supported by the specification (see page 9, lines 13-20 and page 5 lines 22-27).

D. Claims 45-58 (corresponding to Dalvey I – Reissue as of August 18, 2008)

New Claims 45-58 are identical or substantially similar to Claims 1-14 in Dalvey I-Reissue. Dalvey I-Reissue claims priority to a continuation-in-part application No. 09/391,910 (now abandoned) filed on September 9, 1999. Our pending application claims priority to PCT/IB99/00976 with a priority date of June 1, 1999, which is 3 months and 8 days prior to the priority date of Dalvey I-Reissue. Therefore, our pending application has a priority date that precedes Dalvey I-Reissue.

Reproduced below is a chart correlating new claims 45-58, which correspond to Claims 1-14 in Dalvey I-Reissue, with the specification of the present Application. Note, no new matter has been added.

<b>New Claims 45-58</b>	<b>Support in Present U.S Patent Application No. 09/980,466</b>
<p>45. (a) A method for transferring an image to a dark substrate comprising woven, fabric based material or paper:</p> <p>(b) providing a transfer print comprising:</p> <p>(i)a carrier material;</p>	<p>45. (a) A method for transferring an image to a dark substrate comprising woven, fabric based material or paper: Page 17, Lines 15-32 generally describes a method for transferring an image to a T-shirt.</p> <p>(b) providing a transfer print comprising: Page 17, Line 25 provides a transfer print which has been obtained generally according to Example 1, Page 16, Lines 9-37 and Page 17, Lines 1-13.</p> <p>(i) a carrier material; Page 5, line 24 defines a carrier material as a base layer. Page 14, line 11 defines a carrier layer as baking paper. Page 15, line 8 defines a carrier</p>

<p>(ii) an adhesive layer contacting the carrier material; and</p>	<p>material as “for instance silicon paper”.</p> <p>Page 16, lines 13-15 define the carrier material as “a silicon paper of a layer thickness of about 0.1 mm”.</p> <p>Claim 12 defines the carrier material “which consists of a heat-resistant separating paper, preferably silicon paper.”</p> <p>(ii) an adhesive layer contacting the carrier material; and</p> <p>Page 5, lines 24-37 and Page 6 lines 1-30 generally disclose an adhesive and white background layer contacting the carrier material.</p> <p>Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material, preferably a hot melt layer, which comprises dispersed spherical (globular) polyester particles of granular size of less than 30 um.</p> <p>Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily affects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30 um are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer.</p> <p>Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent</p>
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<p>(iii) an ink-receiving layer that comprises a polymer that includes indicia</p>	<p>comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.</p> <p>Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>(iii) an ink-receiving layer that comprises a polymer that includes indicia</p> <p>Page 5, lines 29-30 discloses at least one ink-receiving layer being applied on the background layer.</p> <p>Page 7, lines 5-10 discloses “there occurs no repellent or detachment, respectively...from the ink-receiving layer from the white background layer.”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally disclose an ink-receiving layer that comprises a polymer that includes indicia. The ink—receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly</p>
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<p>(iv) wherein the adhesive layer is applied with a white background layer having one or more of titanium oxide or other white pigment or luminescent pigment;</p>	<p>porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purpose of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form essentially covalent bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot—melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>Page 12, lines 1-37 and Page 13, lines 1-36 provide additional disclosure regarding the ink-receiving layer.</p> <p>(iv) wherein the adhesive layer is applied with a white background layer having one or more of titanium oxide or other white pigment or luminescent pigment;</p> <p>Page 6, lines 9-13 discloses</p>
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preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.

Page 6, lines 14-30, discloses the filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected from the group comprising BaSO<sub>4</sub>, ZnS, TiO<sub>2</sub>, ZnO, SbO. Also organic pigments are usable for the white background layer as far as they are non—fusible at iron pressing temperatures. These pigments can be blended alone or also in a mixture with other (up to 220°C) non—fusible carrier agents, as for example silicates or aluminates.

Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non-fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white-also (up to about 220°C) non-fusible pigments.

Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white back-ground layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...”.

<p>(c) peeling the carrier material from the transfer print;</p>	<p>Page 7, lines 6-8 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer...”.</p> <p>Page 7, lines 11-17 discloses that the “...different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.</p> <p>Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued to the textile substrate...</p> <p>Page 16, lines 21-24 discloses “a white background layer (polyurethane foil) with a thickness of about 40 um containing about 1 weight-% TiO<sub>2</sub> is applied onto the silicon paper coated with the hot-melt.</p> <p>Claim 8 discloses that the ink—jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.</p> <p>Claim 9 discloses the ink—jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO<sub>4</sub>, ZnS, TiO<sub>2</sub>, ZnO, SbO.</p> <p>(c) peeling the carrier material from the transfer print;</p> <p>Page 14 lines 8-11 discloses said transfer is, for instance, effected by a cold copy, i.e. by iron pressing, cooling down and removing the carrier layer (baking paper).</p> <p>Page 15 lines 30-37, Page 16 line 1 discloses “the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed</p>
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<p>(d) contacting at least the remaining portions of the transfer print to the dark substrate comprising woven, fabric based material or paper; and</p> <p>(e) applying heat to the at least the remaining portions of transfer print so that an image including indicia from the ink-receiving layer is transferred from the transfer print to the dark substrate comprising woven, fabric based material or paper</p>	<p>from the support (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation.</p> <p>(d) contacting at least the remaining portions of the transfer print to the dark substrate comprising woven, fabric based material or paper; and</p> <p>Page 17, lines 25-27 discloses “afterwards, the print is removed and put with the white side onto the desired side of the selected T-shirt...”</p> <p>(e) applying heat to at least the remaining portions of the transfer print so that an image including indicia from the ink-receiving layer is transferred from the transfer print to the dark substrate comprising woven, fabric based material or paper</p> <p>Page 17, lines 25-32 discloses “afterwards, the print is removed and put with the white side onto the desired side of the selected T-shirt and iron pressed by means of a hot iron (baking paper + temperature of about 190°C) during 10 seconds. Afterwards, the T-shirt such processed is cooled down to about room temperature and the baking paper, i.e. the silicon paper is removed. The image such obtained is shining and matt.</p> <p>Claim 16 discloses a method for printing textile substrates, characterized in that a graphic presentation is printed laterally correct by a computer via a printer on the ink-jet transfer system according to one of the Claims 1 to 13 and thereafter is hot iron pressed onto the textile substrate and that the carrier material is coldy</p>
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<p>(f) wherein the image comprises a substantially white background or luminescent background and indicia.</p> <p>46. The method of claim 45 wherein the dark substrate comprising woven, fabric based material or paper is a textile.</p> <p>47. The method of claim 45 wherein the dark substrate comprising woven, fabric based material or paper is black.</p> <p>48. The method of claim 45 wherein the ink-receiving layer is situated on the white background layer containing one or more of titanium oxide or other white pigment or luminescent material.</p>	<p>removed after cooling down.</p> <p>(f) wherein the image comprises a substantially white background or luminescent background and indicia.</p> <p>Page 6, lines 15-23 The filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints.</p> <p>46. Page 15, lines 28-29 discloses "...the graphic presentation to be applied onto the textile substrate"</p> <p>47. See Title of present Application "Ink—jet transfer systems for dark textile substrates"</p> <p>48. Page 7, lines 6-10 discloses there occurs "no repellent or detachment, respectively, of the white background layer from the adhesive layer and/or the ink—receiving layer from the white background layer."</p> <p>Page 9, lines 20-21 discloses "the ink—receiving layer (ink layer) is situated on the white background layer...".</p> <p>Page 9, lines 30-37 discloses "In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-</p>
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<p>49. The method of claim 45 wherein the polymer of the ink-receiving layer is applied on the white background layer having titanium oxide or other white pigment and indicia and transfers the titanium oxide or other white pigment in a pattern that forms the indicia on the dark substrate.</p>	<p>copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>49. Page 9, lines 20-21 discloses “the ink-receiving layer (ink layer) is situated on the white background layer...”.</p> <p>Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white background layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer...”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally discloses an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the</p>
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<p>50. (a) A transfer print, comprising:</p> <p>(i) a dark substrate comprising woven, fabric based material or carrier material having paper;</p>	<p>binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form essentially covalent bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>Page 12, lines 10-19 discloses “In a particularly preferred embodiment of the present invention, the ink-receiving layer comprises a highly porous polyamide pigment and a binder consisting of a soluble polyamide, whereby the terminal, free amino groups of the polyamide pigment and of the polyamide binder are capable of fixing reactive groups, for example sulfonate groups or carboxylate groups of the dyestuff molecules. Because of that, with the pigment component as well as the binder component, a chemical fixation of the dyestuff molecules can be achieved.</p> <p>50. (a) A transfer print comprising:</p> <p>Page 17, Line 25 provides a transfer print, which has been obtained generally according to Example 1, Page 16, Lines 9-37 and Page 17, Lines 1-13.</p> <p>(i) a dark substrate comprising woven, fabric based material or carrier material having paper;</p> <p>Page 5, line 24 defines a carrier material as a base layer.</p> <p>Page 14, line 11 defines a carrier</p>
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<p>(ii) an adhesive layer overlaying the carrier material or dark substrate,</p>	<p>layer as baking paper.</p> <p>Page 15, line 8 defines a carrier material as “for instance silicon paper”.</p> <p>Page 16, lines 13-15 define the carrier material as “a silicon paper of a layer thickness of about 0.1 mm”.</p> <p>Claim 12 defines the carrier material “which consists of a heat—resistant separating paper, preferably silicon paper.”</p> <p>(ii) an adhesive layer overlaying the carrier material or dark substrate,</p> <p>Page 5, lines 24-37 and Page 6 lines 1-30 generally discloses an adhesive and white background layer contacting the carrier material. Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material, preferably a hot melt layer, which comprises dispersed spherical (globular) polyester particles of granular size of less than 30 um.</p> <p>Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily affects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30 um are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer.</p> <p>Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot—melt,</p>
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<p>(iii) wherein the adhesive layer is applied with a white background layer having titanium oxide or other white pigment or luminescent pigment; and</p>	<p>also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot—melt since said hot—melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.</p> <p>Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>(iii) wherein the adhesive layer is applied with a white background layer having titanium oxide or other white pigment or luminescent pigment; and</p> <p>Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non—fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white, also (up to about 220°C) non-fusible pigments.</p> <p>Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white back-ground layer in the print system itself,</p>
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i.e. between the adhesive layer and the ink-receiving layer ...”.

Page 7, lines 6-8 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer...”.

Page 7, lines 11-17 discloses that the “...different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.

Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued to the textile substrate...

Page 16, lines 21-24 discloses “a white background layer (polyurethane foil) with a thickness of about 40 um containing about 1 weight-% TiO<sub>2</sub> is applied onto the silicon paper coated with the hot-melt.

Claim 8 discloses that the ink—jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.

Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO<sub>4</sub>, ZnS, TiO<sub>2</sub>, ZnO, SbO.

Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.

Page 6, lines 14-30, discloses the filled white layer or the polymers contained

<p>(iv) an ink-receiving layer having polymer.</p>	<p>therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected from the group comprising BaSO<sub>4</sub>, ZnS, TiO<sub>2</sub>, ZnO, SbO. Also organic pigments are usable for the white background layer as far as they are non-fusible at iron pressing temperatures. These pigments can be blended alone or also in a mixture with other (up to 220°C) non—fusible carrier agents, as for example silicates or aluminates.</p> <p>(iv) an ink-receiving layer having polymer. Page 5, lines 29-30 discloses at least one ink-receiving layer being applied on the background layer. Page 7, lines 5-10 discloses “there occurs no repellent or detachment, respectively...from the ink-receiving layer from the white background layer.” Page 9, lines 20-37 and Page 10 lines 1-17 generally discloses an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are</p>
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<p>51. The transfer print of claim 50 wherein the ink-receiving layer is situated on the white background layer having titanium oxide or other white pigment.</p>	<p>suitable as ink—receiving layer for the purpose of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>Page 12, lines 1-37 and Page 13, lines 1-36 provide additional disclosure regarding the ink-receiving layer.</p> <p>51. Page 7, lines 6-10 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer and/or the ink-receiving layer from the white background layer.”</p> <p>Page 9, lines 20-21 discloses “the ink-receiving layer (ink layer) is situated on the white background layer...”.</p> <p>Page 9, lines 30-37 discloses “In</p>
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<p>52. The transfer print of claim 50 wherein the ink-receiving layer comprises polypropylene.</p> <p>53. The transfer print of claim 50 wherein the ink-receiving layer comprises polyester or polyamide or a mixture of polyester and polyamide.</p>	<p>principle, all known, mainly highly porous pigments are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>52. Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>53. Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>Page 12, lines 10-19 discloses “In a particularly preferred embodiment of the present invention, the ink-receiving layer comprises a highly porous polyamide pigment and a binder consisting of a soluble polyamide, whereby the terminal, free amino groups of the polyamide pigment and of the polyamide binder are capable of fixing reactive groups, for example sulfonate groups or carboxylate</p>
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<p>54. A kit comprising the transfer print of claim 50 and a dark textile.</p> <p>55. The kit of claim 54 wherein the dark textile is an article of clothing.</p> <p>56. The kit of claim 55 wherein the article of clothing is a T-shirt.</p> <p>57. The transfer print of claim 50 wherein the ink-receiving layer is a polyamide.</p>	<p>groups of the dyestuff molecules. Because of that, with the pigment component as well as the binder component, a chemical fixation of the dyestuff molecules can be achieved.</p> <p>Page 17, Line 25 provides a transfer print which has been obtained generally according to Example 1, Page 16, Lines 9-37 and Page 17, Lines 1-13</p> <p>54. Page 15, lines 28-29 discloses “..the graphic presentation to be applied onto the textile substrate”</p> <p>55. See Title of present Application “Ink-jet transfer systems for dark textile substrates”</p> <p>56. Page 15, line 34 ...”the desired textile substrate, for instance a T-shirt,...” Page 15, line 34 ...”the desired textile substrate, for instance a T-shirt,...”</p> <p>57. Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>Page 12, lines 10-19 discloses “In a particularly preferred embodiment of the present invention, the ink-receiving layer comprises a highly porous polyamide pigment and a binder consisting of a soluble polyamide, whereby the terminal, free amino groups of the polyamide pigment and of the polyamide binder are capable of fixing reactive groups, for example sulfonate groups or carboxylate groups of the dyestuff molecules. Because</p>
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<p>58. The transfer print of claim 50 wherein the ink-receiving layer comprises LDPE, EAA, EVA, MAEA, nylon or mixtures of these polymers or polyamide.</p>	<p>of that, with the pigment component as well as the binder component, a chemical fixation of the dyestuff molecules can be achieved.</p> <p>58. Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>Page 12, lines 10-19 discloses “In a particularly preferred embodiment of the present invention, the ink-receiving layer comprises a highly porous polyamide pigment and a binder consisting of a soluble polyamide, whereby the terminal, free amino groups of the polyamide pigment and of the polyamide binder are capable of fixing reactive groups, for example sulfonate groups or carboxylate groups of the dyestuff molecules. Because of that, with the pigment component as well as the binder component, a chemical fixation of the dyestuff molecules can be achieved.</p>
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D. Claims 59-90 (corresponding to Dalvey II as of November 24, 2008 )

New Claims 59-90 are substantially similar to Claims 17, 19-26, 28-39, and 47-57 in Dalvey II as of the last known amendment dated November 24, 2008. Dalvey II claims priority to a continuation-in-part application No. 09/391,910 filed on September 9, 1999. Our pending application claims priority to PCT/IB99/00976 with a priority date of June 1, 1999 which is 3 months and 8 days prior to the priority date of Dalvey II . Therefore, our pending application has a priority date that precedes Dalvey II.

Reproduced below is a chart correlating new claims 59-90, which correspond to Claims Claims 17, 19-26, 28-39, and 47-57 in Dalvey II, with the specification of the present Application:

New Claims 59-90	Support in Application No. 09/980,466
<p>59. (a) A method for making a transfer print, comprising:</p> <p>(b) providing an adhesive layer;</p> <p>(c) overlaying the adhesive layer with a polymer member, the polymer member comprising an ink-</p>	<p>59. (a) A method for making a transfer print</p> <p>Page 16, lines 10-37 and Page 17 lines 1-13 generally discloses a method for making a transfer print.</p> <p>(b) providing an adhesive layer;</p> <p>Page 15, lines 5-7 discloses application of an adhesive layer, preferably a hot—melt layer, which comprises dispersed spherical polyester particles of a granular size of less than 30 pm.</p> <p>Page 9, lines 13-19 discloses the adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in solvent can be used. For example, a solvent comprising adhesive on the basis of polyamides or polyethylenes which one the on hand effects a good adhesion to the textile substrate....</p> <p>(c) overlaying the adhesive layer with a polymer member, the polymer member</p>

<p>receiving layer effective for receiving imparted image; and</p> <p>(d) combining a portion of the polymer member with a white background layer having titanium oxide or other white pigment, thereby providing an opaque background for the imparted image.</p>	<p>comprising an ink-receiving layer effective for receiving imparted image</p> <p>Page 8, lines 13-17 discloses in a very particularly preferred embodiment, the adhesive layer ...is a pure hot—melt layer. The hot—melt layer is essentially a wax—like polymer which is easily fusible and thus can for example be transferred onto the textile substrate together with the imprinted ink-receiving layer....</p> <p>Page 9, lines 13-19 discloses the adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in solvent can be used. For example, a solvent comprising adhesive on the basis of polyamides or polyethylenes which one the on hand effects a good adhesion to the textile substrate....</p> <p>Page 12, lines 10-15 discloses in a particularly preferred embodiment of the present invention, the ink-receiving layer comprises a highly porous polyamide pigment and a binder consisting of a soluble polyamide.</p> <p>Page 16, lines 32-37, Page 17 lines 1-2 discloses “the ink-receiving layer was previously prepared as follows: an ethanol/water mixture in the ratio of 3:1 is placed in a vessel and a soluble polyamide binder is dissolved therein under heating to 45°C. After-wards the highly porous polyamide pigment “Orgasol 3501 EX D NAlI” with a granular size of 10 um as well as an interior surface of about 25 m2/g pigment is dispersed in the solution.</p> <p>(d) combining a portion of the polymer member with a white background layer having titanium oxide or other white pigment, thereby providing an opaque background for the imparted image;</p> <p>Page 5, lines 28-30 discloses a white background layer being applied on the adhesive layer (hot-melt layer)</p> <p>Page 7, lines 7-10 discloses there occurs no repellant or detachment,</p>
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	<p>respectively, of the white background layer from the adhesive layer and/or the ink-receiving layer from the white background layer.</p> <p>Page 16, lines 25-31 discloses “on said elastic background layer of polyurethane/TiO<sub>2</sub> (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.</p> <p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% Ti<sub>2</sub> is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p> <p>Page 7, lines 11-17 discloses that the “..different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.</p> <p>Claim 8 discloses that the ink-jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.</p> <p>Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO<sub>4</sub>, ZnS, TiO<sub>2</sub>, ZnO, SbO.</p> <p>Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.</p>
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<p>60. The method of claim 59 wherein the ink-receiving layer is effective for receiving ink jet imparted image.</p> <p>61. The method of claim 59 wherein the opaque background comprises a substantially white or luminescent background.</p>	<p>60. Page 17, lines 9-11 discloses on the coating machine, the solvent is allowed to evaporate in order to obtain a solid ink-receiving layer on which the desired graphic presentation can be printed by means of an ink-jet printer.</p> <p>61. Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non-fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white also (up to about 220°C) non-fusible pigments.</p> <p>Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white back-ground layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...”.</p> <p>Page 7, lines 6-8 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer...”.</p> <p>Page 7, lines 11-17 discloses that the “...different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.</p> <p>Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued to the textile substrate...</p> <p>Page 16, lines 21-24 discloses “a white background layer (polyurethane foil) with a thickness of about 40 um containing about 1 weight-% TiO<sub>2</sub> is applied onto the silicon paper coated with the hot-melt.</p> <p>Claim 8 discloses that the ink-jet</p>
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<p>62. (a) A method for transferring an image to a</p>	<p>transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.</p> <p>Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO<sub>4</sub>, ZnS, TiO<sub>2</sub>, ZnO, SbO.</p> <p>Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.</p> <p>Page 6, lines 14-30, discloses the filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected from the group comprising BaSO<sub>4</sub>, ZnS, TiO<sub>2</sub>, ZnO, SbO. Also organic pigments are usable for the white background layer as far as they are non—fusible at iron pressing temperatures. These pigments can be blended alone or also in a mixture with other (up to 220°C) non—fusible carrier agents, as for example silicates or aluminates.</p> <p>62. (a) A method for transferring an image</p>
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<p>dark substrate comprising woven, fabric based material, or paper comprising:</p> <p>(b) providing a transfer print comprising</p> <p>(i)an adhesive layer,</p>	<p>to a dark substrate comprising woven, fabric based material, or paper comprising:</p> <p>Page 17, Lines 15-32 generally describes a method for transferring an image to a T-shirt.</p> <p>(b) providing a transfer print comprising</p> <p>Page 17, Line 25 provides a transfer print which has been obtained generally according to Example 1, Page 16, Lines 9-37 and Page 17, Lines 1-13.</p> <p>(i) an adhesive layer</p> <p>Page 5, lines 24-37 and Page 6 lines 1-30 generally discloses an adhesive and white background layer contacting the carrier material.</p> <p>Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material, preferably a hot melt layer, which comprises dispersed spherical (globular) polyester particles of granular size of less than 30 um.</p> <p>Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily effects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30 um are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer.</p> <p>Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot-melt,</p>
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<p>(ii) an ink-receiving layer that comprises a polymer configured to receive an image, wherein one or more of the ink-receiving layer and the adhesive layer comprise a white background layer having titanium oxide or other white pigment or luminescent pigment;</p>	<p>also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.</p> <p>Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>(ii) an ink-receiving layer that comprises a polymer configured to receive an image, wherein one or more of the ink-receiving layer and the adhesive layer comprise a white background layer having titanium oxide or other white pigment or luminescent pigment;</p> <p>Page 5, lines 29-30 discloses at least one ink-receiving layer being applied on the background layer.</p> <p>Page 7, lines 5-10 discloses “there occurs no repellent or detachment, respectively...from the ink-receiving layer from the white background layer.”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally discloses an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises</p>
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a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.

Page 12, lines 1-37 and Page 13, lines 1-36 provide additional disclosure regarding the ink-receiving layer.

Page 5, lines 28-30 discloses a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer.

Page 7, lines 7-10 discloses there occurs no repellant or detachment, respectively, of the white background layer from the adhesive layer and/or the ink-receiving layer from the white background layer.

Page 16, lines 25-31 discloses “on said elastic background layer of polyurethane/TiO<sub>2</sub> (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.

Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% Ti<sub>2</sub> is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”

Page 7, lines 11-17 discloses that the “...different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.

Claim 8 discloses that the ink-jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.

Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO<sub>4</sub>, ZnS, TiO<sub>2</sub>, ZnO, SbO.

Page 6, lines 9-13 discloses preferred elastic plastics for the white

	<p>background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.</p> <p>Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.</p> <p>Page 6, lines 14-30, discloses the filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected from the group comprising BaSO<sub>4</sub>, ZnS, TiO<sub>2</sub>, ZnO, SbO. Also organic pigments are usable for the white background layer as far as they are non-fusible at iron pressing temperatures. These pigments can be blended alone or also in a mixture with other (up to 220°C) non-fusible carrier agents, as for example silicates or aluminates.</p> <p>Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non-fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white also (up to about</p>
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<p>(c)contacting one or more portions of the transfer print to the dark substrate;</p>	<p>220°C) non-fusible pigments.</p> <p>Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white back-ground layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...”.</p> <p>Page 7, lines 6-8 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer...”.</p> <p>Page 7, lines 11-17 discloses that the “...different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.</p> <p>Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued to the textile substrate...</p> <p>Page 16, lines 21-24 discloses “a white background layer (polyurethane foil) with a thickness of about 40 um containing about 1 weight-% TiO<sub>2</sub> is applied onto the silicon paper coated with the hot-melt.</p> <p>Claim 8 discloses that the ink-jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.</p> <p>Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO<sub>4</sub>, ZnS, TiO<sub>2</sub>, ZnO, SbO.</p> <p>(c) contacting one or more portions of the transfer print to the dark substrate;</p> <p>Page 17, lines 25-27 discloses “afterwards, the print is removed and put</p>
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<p>(d) applying heat to one or more portions of the transfer print so that received image and the white background layer, provided by the pigment, are concurrently transferred from a portion of the transfer print to the dark substrate;</p> <p>63. The method of claim 62 wherein the dark substrate is a textile.</p>	<p>with the white side onto the desired side of the selected T-shirt...”</p> <p>Page 17, lines 25-32 discloses “afterwards, the print is removed and put with the white side onto the desired side of the selected T-shirt and iron pressed by means of a hot iron (baking paper + temperature of about 190°C) during 10 seconds. Afterwards, the T-shirt such processed is cooled down to about room temperature and the baking paper, i.e. the silicon paper is removed. The image such obtained is shining and matt.</p> <p>(d) applying heat to one or more portions of the transfer print so that received image and the white background layer, provided by the pigment, are concurrently transferred from a portion of the transfer print to the dark substrate;</p> <p>Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink—jet transfer system such obtained by a usual printer, e.g. an ink—jet printer (ink—jet—plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T—shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat—resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>63. Page 15, lines 28-29 discloses “..the graphic presentation to be applied onto the textile substrate”</p>
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<p>64. The method of claim 62 wherein the dark substrate is black.</p> <p>65. The method of claim 62 wherein the ink-receiving layer is impregnated with the white background layer having one or more of a titanium oxide or other white pigment or luminescent material.</p> <p>66. The method of claim 62, wherein the polymer of the ink-receiving layer encapsulates substantially white background layer and receiving image, and transfers the substantially white background layer and the receiving image in a pattern that forms an image on the dark substrate.</p>	<p>64. See Title of present Application “Ink—jet transfer systems for dark textile substrates”</p> <p>65. Page 7, lines 6-10 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer and/or the ink—receiving layer from the white background layer.”</p> <p>Page 9, lines 20-21 discloses “the ink—receiving layer (ink layer) is situated on the white background layer...”</p> <p>Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>66. Page 9, lines 20-21 discloses “the ink-receiving layer (ink layer) is situated on the white background layer...”</p> <p>Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white background layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer...”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally discloses an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic</p>
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presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink—receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.

Page 12, lines 10-19 discloses “In a particularly preferred embodiment of the present invention, the ink-receiving layer comprises a highly porous polyamide pigment and a binder consisting of a soluble polyamide, whereby the terminal, free amino groups of the polyamide

<p>67. (a) An article for imparting an image to a substrate comprising:</p> <p>(b) an adhesive layer;</p>	<p>pigment and of the polyamide binder are capable of fixing reactive groups, for example sulfonate groups or carboxylate groups of the dyestuff molecules. Because of that, with the pigment component as well as the binder component, a chemical fixation of the dyestuff molecules can be achieved.</p> <p>67. (a) An article for imparting an image to a substrate comprising:</p> <p>Page 17, Line 25 provides a transfer print which has been obtained generally according to Example 1, Page 16, Lines 9 - 37 and Page 17, Lines 1-13.</p> <p>(b)an adhesive layer;</p> <p>Page 5, lines 24-37 and Page 6 lines 1-30 generally discloses an adhesive and white background layer contacting the carrier material.</p> <p>Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material, preferably a hot melt layer, which comprises dispersed spherical (globular) polyester particles of granular size of less than 30 um.</p> <p>Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily effects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30 um are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax</p>
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<p>(c)one or more layers overlaying the adhesive layer, comprising an ink-receiving layer and a polymer that includes a white background layer having titanium oxide or other white pigment,</p>	<p>components) so that during melting they can form or enhance ,respectively, the adhesion to the white background layer.</p> <p>Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.</p> <p>Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>(c) one or more layers overlaying the adhesive layer, comprising an ink-receiving layer and a polymer that includes a white background layer having titanium oxide or other white pigment,</p> <p>Page 7, lines 6-10 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer and/or the ink-receiving layer from the white background layer.”</p> <p>Page 5, lines 22-35 discloses The ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer),</p>
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<p>(d) wherein the ink-receiving layer is effective for receiving the image; and wherein the white background layer provides an opaque background for received image.</p>	<p>an adhesive layer applied on the carrier material, preferably a hot-melt layer, which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non-fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white also (up to about 220°C) non—fusible pigments.</p> <p>Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>(d) wherein the ink-receiving layer is effective for receiving the image; and wherein the white background layer provides an opaque background for received image.</p> <p>Page 7, lines 5-10 discloses “there occurs no repellent or detachment, respectively...from the ink-receiving layer from the white background layer.”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally discloses an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic</p>
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presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot—melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.

Page 12, lines 1-37 and Page 13, lines 1-36 provide additional disclosure regarding the ink-receiving layer.

Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The

<p>68. The article of claim 67 wherein the ink-receiving layer comprises polypropylene.</p> <p>69. The article of claim 67 wherein the ink-receiving layer comprises polyester or polyamide or a mixture of polyester and polyamide.</p>	<p>white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non-fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white also (up to about 220°C) non-fusible pigments.</p> <p>68. Page 12, lines 1-37 and Page 13, lines 1-36 provide additional disclosure regarding the ink-receiving layer.</p> <p>Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>69. Page 9, lines 30-37 discloses “In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>Page 12, lines 10-19 discloses “In a particularly preferred embodiment of the present invention, the ink-receiving layer comprises a highly porous polyamide pigment and a binder consisting of a soluble polyamide, whereby the terminal, free amino groups of the polyamide pigment and of the polyamide binder are capable of fixing reactive groups, for example sulfonate groups or carboxylate groups of the dyestuff molecules. Because of that, with the pigment component as</p>
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	<p>well as the binder component, a chemical fixation of the dyestuff molecules can be achieved.</p> <p>Page 17, Line 25 provides a transfer print which has been obtained generally according to Example 1, Page 16, Lines 9-37 and Page 17, Lines 1-13</p>
<p>70. The article of claim 67 wherein the substrate is an article of clothing.</p>	<p>70. Page 15, lines 28-29 discloses "...the graphic presentation to be applied onto the textile substrate"</p> <p>See Title of present Application "Ink-jet transfer systems for dark textile substrates"</p> <p>Page 15, line 34 "...the desired textile substrate, for instance a T-shirt..."</p>
<p>71. The article of claim 67 wherein the polymer of the ink-receiving layer is a polyamide.</p>	<p>71. Page 9, lines 30-37 discloses "In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers."</p> <p>Page 12, lines 10-19 discloses "In a particularly preferred embodiment of the present invention, the ink-receiving layer comprises a highly porous polyamide pigment and a binder consisting of a soluble polyamide, whereby the terminal, free amino groups of the polyamide pigment and of the polyamide binder are capable of fixing reactive groups, for example sulfonate groups or carboxylate groups of the dyestuff molecules. Because of that, with the pigment component as well as the binder component, a chemical fixation of the dyestuff molecules can be achieved.</p>
<p>72. The article of claim 67 wherein the polymer</p>	<p>72. Page 9, lines 30-37 discloses "In</p>



<p>comprises LDPE, EAA, EVA, MAEA, or nylon, mixtures of these polymers, or polyamide.</p>	<p>principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate copolymers.”</p> <p>Page 12, lines 10-19 discloses “In a particularly preferred embodiment of the present invention, the ink—receiving layer comprises a highly porous polyamide pigment and a binder consisting of a soluble polyamide, whereby the terminal, free amino groups of the polyamide pigment and of the polyamide binder are capable of fixing reactive groups, for example sulfonate groups or carboxylate groups of the dyestuff molecules. Because of that, with the pigment component as well as the binder component, a chemical fixation of the dyestuff molecules can be achieved.</p>
<p>73.(a) A method for making a transfer print, comprising:</p> <p>(b) providing a carrier material, contacting the carrier material with an adhesive layer;</p> <p>(c) contacting the adhesive layer with an ink-receptive polymer that includes a white background layer having titanium oxide or other white pigment, wherein the ink receptive polymer</p>	<p>73. (a) A method for making a transfer print comprising:</p> <p>Page 16, lines 10-37 and Page 17 lines 1-13 generally discloses a method for making a transfer print.</p> <p>(b) providing a carrier material, contacting the carrier material with an adhesive layer;</p> <p>Page 16, lines 11-13 “In a first step, the hot-melt layer is applied onto a carrier material: Thereby a silicon paper...”(Note, the hot-melt layer is defined as the adhesive layer in Dalvey I, which has a similar specification to Dalvey II).</p> <p>(c) contacting the adhesive layer with an ink-receptive polymer that includes a white background layer having titanium oxide or other white pigment, wherein the ink</p>

<p>is effective for receiving an image and providing an opaque background for the image; and</p> <p>(d) wherein the carrier material, when peeled away from the ink-receptive polymer, or a cover layer is effective for covering the image received by the ink-receptive polymer prior to an application of heat.</p>	<p>receptive polymer is effective for receiving an image and providing an opaque background for the image</p> <p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% Ti<sub>2</sub> is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p> <p>Page 14, lines 3-24 discloses a hot-melt layer (adhesive layer, which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>(d) wherein the carrier material, when peeled away from the ink-receptive polymer, or a cover layer is effective for covering the image received by the ink-receptive polymer prior to an application of heat.</p> <p>Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink—jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper (cover layer) and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic</p>
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<p>74. The method of claim 73 wherein the carrier material or the cover layer is effective for transferring heat from a heat source to the ink-receptive polymer when covering the ink-receptive polymer.</p> <p>75. The method of claim 73 wherein, once contacted, at least a portion of the adhesive layer is peelable from the ink-receptive layer with the carrier material.</p>	<p>presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>74. Page 15, lines 28-37, Page 16, lines 1-4 discloses "First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper (cover layer) and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>75. Page 14, lines 3-24 discloses a hot-melt layer (adhesive layer) which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material preferably a hot melt layer which comprises dispersed spherical (globular) polyester particles of granular size of less than 30 um.</p> <p>Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is</p>
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<p>76. The method of claim 73, further comprising</p>	<p>directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily affects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30 um are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer.</p> <p>Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.</p> <p>Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>76. Page 15, lines 28-37, Page 16 lines</p>
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<p>applying an image including received image and the white background layer to the ink receptive polymer.</p>	<p>1-4 discloses "First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p>
<p>77. The method of claim 76, wherein the received image includes ink from an ink pen, an ink jet printer, or a laser printer.</p>	<p>77. Page 17, lines 9-11 discloses on the coating machine, the solvent is allowed to evaporate in order to obtain a solid ink-receiving layer on which the desired graphic presentation can be printed by means of an ink-jet printer.</p>
<p>78. The article of claim 67, further comprising a dark substrate comprising textiles or paper based material for receiving the image including received image and the opaque background.</p>	<p>78. Page 15, lines 28-29 discloses ".the graphic presentation to be applied onto the textile substrate" See Title of present Application "Ink-jet transfer systems for dark textile substrates"</p>
<p>79. The article of claim 67, further wherein the ink-receiving layer comprises an image.</p>	<p>79. Page 9, lines 20-22 generally disclose an ink-receiving layer that comprises a polymer that includes indicia.</p>
<p>80. The method of claim 59, further comprising combining a portion of the adhesive layer with a white background layer having a titanium oxide or other white pigment.</p>	<p>80. Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes,</p>

	<p>polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.</p> <p>Page 6, lines 14-30, discloses the filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected from the group comprising BaSO<sub>4</sub>, ZnS, TiO<sub>2</sub>, ZnO, SbO. Also organic pigments are usable for the white background layer as far as they are non-fusible at iron pressing temperatures. These pigments can be blended alone or also in a mixture with other (up to 220°C) non-fusible carrier agents, as for example silicates or aluminates.</p> <p>Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non-fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white also (up to about 220°C) non-fusible pigments.</p> <p>Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white back-ground layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...”.</p> <p>Page 7, lines 6-8 discloses there occurs “no repellent or detachment, respectively, of the white background layer</p>
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	<p>from the adhesive layer...".</p> <p>Page 7, lines 11-17 discloses that the "...different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate".</p> <p>Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued to the textile substrate...</p> <p>Page 16, lines 21-24 discloses "a white background layer (polyurethane foil) with a thickness of about 40 um containing about 1 weight-% TiO<sub>2</sub> is applied onto the silicon paper coated with the hot-melt.</p> <p>Claim 8 discloses that the ink-jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.</p> <p>Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO<sub>4</sub>, ZnS, TiO<sub>2</sub>, ZnO, SbO.</p>
81. The method of claim 59, further comprising providing a carrier material underlaying the adhesive layer.	<p>81. Page 5, lines 22-29 discloses the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer, which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer..</p>
82. The method of claim 81, wherein the carrier material and at least a portion of the adhesive layer, when peeled away from the polymer	<p>82. Page 15, lines 28-37, Page 16 lines 1-4 discloses "First the graphic presentation to be applied onto the textile</p>

<p>member, or a cover layer is effective for covering the imparted image on the ink receiving layer and for transferring heat from a heat source to the polymer member.</p> <p>83. (New) The method of claim 59, wherein overlaying the adhesive layer with a polymer member includes overlaying the adhesive layer with at least one ink-receiving layer configured to receive imparted image, and one or both of an EAA resin layer or a white background layer configured to provide the opaque background.</p>	<p>substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>Page 14, lines 3-24 discloses a hot-melt layer (adhesive layer) which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>83. Page 9, lines 20-37 and Page 10 lines 1-17 generally discloses an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are</p>
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	<p>suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>Page 12, lines 1-37 and Page 13, lines 1-36 provide additional disclosure regarding the ink-receiving layer.</p> <p>Page 8, line 37 and Page 9, lines 1-2 discloses referring to the adhesive layer “a preferred hot-melt compound is for example an ethylene acrylic acid copolymer or a PU dispersion.</p> <p>Page 14, lines 23-24 discloses “A usual hot-melt (adhesive layer) is for instance an ethylene acrylic acid copolymer dispersion”.</p> <p>Page 16, lines 12-20 discloses “In a first step, the hot-melt layer is applied onto</p>
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a carrier material: Thereby, a silicon paper of a layer thickness of about 0.1 mm is coated with an ethylene acrylic acid copolymer comprising dispersed spherical polyester particles of a granular size of between 5-25  $\mu\text{m}$ . The ratio of ethylene acrylic acid copolymer and spherical polyester particles is about 60:40 and the resulting layer thickness of the hot-melt layer is about 30  $\mu\text{m}$ .

Original Claim 11 discloses "the ink-jet transfer system according to claim 10, characterized in that the hot-melt layer contains or consists of a mixture a blend of an ethylene acrylic acid copolymer and polyester particles of a granular size of less than or equal to 20  $\mu\text{m}$ .

Page 5, lines 24-37 and Page 6 lines 1-30 generally discloses an adhesive and white background layer contacting the carrier material.

Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material preferably a hot melt layer which comprises dispersed spherical (globular) polyester particles of granular size of less than 30  $\mu\text{m}$ .

Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily affects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30  $\mu\text{m}$  are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax

	<p>components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer.</p> <p>Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.</p> <p>Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p>
84. (New) The method of claim 62, wherein providing the transfer print further comprises a carrier material.	<p>84. Page 5, lines 22-29 discloses the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer, which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer..</p>
85. (New) The method of claim 84, further comprising peeling at least a portion of the adhesive layer and the carrier material away from the ink-receiving layer.	<p>85. Page 15, lines 28-37, Page 16 lines 1-4 discloses "First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto</p>

<p>86. (New) The method of claim 85, further comprising positioning the peeled adhesive layer and the carrier material, or a cover layer, over the ink-receiving layer.</p>	<p>the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>Page 14, lines 3-24 discloses a hot-melt layer (adhesive layer), which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>86. Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink—jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper)</p>
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<p>87. (New) The method of claim 86, wherein applying heat to the one or more portions of the transfer print includes applying heat to one of the peeled adhesive layers and the carrier material or the cover layer, and the ink-receiving layer.</p> <p>88. (New) The article of claim 67, further comprising a carrier material underlying the adhesive layer.</p> <p>89. (New) The article of claim 88, wherein the carrier material and at least a portion of the adhesive layer, when peeled away from the polymer and the ink-receptive layer, or a cover layer is effective for covering received image.</p>	<p>is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>87. Page 15, lines 28-37, Page 16 lines 1-4 discloses "First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>88. Page 5, lines 22-29 discloses the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer.</p> <p>89. Page 15, lines 28-37, Page 16 lines 1-4 discloses "First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards</p>
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<p>90. (New) The method of claim 73, wherein the carrier material is peeled away from the ink-receptive polymer along a portion of the adhesive layer.</p>	<p>iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>90. Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p>
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E. Claims 91-113 (corresponding to Dalvey III as of August 18, 2008)

New Claims 91-111 are substantially similar to Claims 1-11 and 14-23 in Dalvey III as of the last amendment dated August 18, 2008. Dalvey III claims priority to a continuation-in-part application No. 09/391,910 filed on September 9, 1999. Our pending application claims priority to PCT/IB99/00976 with a priority date of June 1, 1999 which is 3 months and 8 days prior to the priority date of Dalvey III. Therefore, our pending application has a priority date that precedes Dalvey III.

Reproduced below is a chart correlating new claims 91-111, which correspond to Claims 1-11 and 14-23 in Dalvey III, with the specification of the present Application:

New Claims 91-113	Support in Application No. 09/980,466
<p>91. (a) A method for transferring an image to a textile, comprising:</p> <p>(b) obtaining a</p> <p>(i) transfer print comprising</p> <p>(ii) an ink receiving layer;</p>	<p>91.(a) A method for transferring an image to a textile, comprising:</p> <p>Page 17, Lines 15-32 generally describes a method for transferring an image to a T-shirt.</p> <p>(b) obtaining a</p> <p>(i) transfer print comprising</p> <p>Page 16, lines 10-37 and Page 17 lines 1-13 generally disclose a method for making a transfer print.</p> <p>Page 17, Line 25 provides a transfer print, which has been obtained generally according to Example 1, Page 16, Lines 9-37 and Page 17, Lines 1-13.</p> <p>(ii) an ink receiving layer;</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally disclose an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white</p>

background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.

Page 12, lines 1-37 and Page 13, lines 1-36 provide additional disclosure



<p>(iii) an adhesive layer having an EAA resin,</p>	<p>regarding the ink-receiving layer.</p> <p>(iii) an adhesive layer having an EAA resin,</p> <p>Page 8, line 37 and Page 9, lines 1-2 discloses referring to the adhesive layer “a preferred hot-melt compound is for example an ethylene acrylic acid copolymer or a PU dispersion.</p> <p>Page 14, lines 23-24 discloses “A usual hot-melt (adhesive layer) is for instance an ethylene acrylic acid copolymer dispersion.</p> <p>Page 16, lines 12-20 discloses “In a first step, the hot-melt layer is applied onto a carrier material: Thereby, a silicon paper of a layer thickness of about 0.1 mm is coated with an ethylene acrylic acid copolymer comprising dispersed spherical polyester particles of a granular size of between 5-25 um. The ratio of ethylene acrylic acid copolymer and spherical polyester particles is about 60:40 and the resulting layer thickness of the hot-melt layer is about 30 um.</p> <p>Original Claim 11 discloses “the ink-jet transfer system according to claim 10, characterized in that the hot-melt layer contains or consists of a mixture a blend of an ethylene acrylic acid copolymer and polyester particles of a granular size of less than or equal to 20 um.</p> <p>Page 5, lines 24-37 and Page 6 lines 1-30 generally disclose an adhesive and white background layer contacting the carrier material.</p> <p>Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material preferably a hot melt layer, which comprises dispersed spherical (globular) polyester particles of granular size of less than 30 um.</p> <p>Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The</p>
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adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily affects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30  $\mu\text{m}$  are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer.

Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.

Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.

<p>(iv) a carrier material having silicone;</p>	<p>(iv) a carrier material having silicone; Page 5, line 24 defines a carrier material as a base layer. Page 14, line 11 defines a carrier layer as baking paper. Page 15, line 8 defines a carrier material as “for instance silicon paper”. Page 16, lines 13-15 define the carrier material as “a silicon paper of a layer thickness of about 0.1 mm”. Claim 12 defines the carrier material “which consists of a heat-resistant separating paper, preferably silicon paper.”</p>
<p>(c) peeling the carrier material having silicone from the adhesive layer containing an EAA resin and ink receiving layer;</p>	<p>(c) peeling the carrier material having silicone from the adhesive layer containing an EAA resin and ink receiving layer; Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p>
<p>(d) applying at least the non-peeled portions of the transfer print to the textile so that the adhesive layer having EAA resin contacts the textile;</p>	<p>(d) applying at least the non-peeled portions of the transfer print to the textile so that the adhesive layer having EAA resin contacts the textile; Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic</p>

<p>(e) applying one of the peeled carrier material or a cover layer over at least the ink-receiving layer and the adhesive layer having EAA resin; and</p> <p>(f) applying heat to one of the peeled carrier material having silicone or the cover layer, the ink-receiving layer, the adhesive layer having an EAA resin, and the textile.</p>	<p>presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>(e) applying one of the peeled carrier material or a cover layer over at least the ink-receiving layer and the adhesive layer having EAA resin; and  See above - “covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds.”</p> <p>(f) applying heat to one of the peeled carrier material having silicone or the cover layer, the ink-receiving layer, the adhesive layer having an EAA resin, and the textile.  Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a</p>
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	<p>temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>Claim 16 discloses a method for printing textile substrates, characterized in that a graphic presentation is printed laterally correct by a computer via a printer on the ink-jet transfer system according to one of the Claims 1 to 13 and thereafter is hot iron pressed onto the textile substrate and that the carrier material is coldy removed after cooling down.</p> <p>92. (a) A transfer print, comprising:</p> <p>(b) an ink receiving layer;</p>
	<p>92. (a) A transfer print comprising:</p> <p>Page 17, Line 25 provides a transfer print which has been obtained generally according to Example 1, Page 16, Lines 9-37 and Page 17, Lines 1-13.</p> <p>(b)An ink receiving layer;</p> <p>Page 5, lines 29-30 discloses at least one ink-receiving layer being applied on the background layer.</p> <p>Page 7, lines 5-10 discloses “there occurs no repellent or detachment, respectively...from the ink-receiving layer from the white background layer.”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally disclose an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic</p>

<p>(c) an adhesive layer having an EAA resin or polymer having a melt point of about 20 degrees C. to about 300 degrees C. contacting the ink-receiving layer;</p>	<p>presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>(c) an adhesive layer having an EAA resin or polymer having a melt point of about 20 degrees C. to about 300 degrees C. contacting the ink-receiving layer;</p> <p>Page 8, line 37 and Page 9, lines 1-2 discloses referring to the adhesive layer</p>
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“a preferred hot-melt compound is for example an ethylene acrylic acid copolymer or a PU dispersion.

Page 14, lines 23-24 discloses “A usual hot-melt (adhesive layer) is for instance an ethylene acrylic acid copolymer dispersion.

Page 16, lines 12-20 discloses “In a first step, the hot-melt layer is applied onto a carrier material: Thereby, a silicon paper of a layer thickness of about 0.1 mm is coated with an ethylene acrylic acid copolymer comprising dispersed spherical polyester particles of a granular size of between 5-25  $\mu\text{m}$ . The ratio of ethylene acrylic acid copolymer and spherical polyester particles is about 60:40 and the resulting layer thickness of the hot-melt layer is about 30  $\mu\text{m}$ .

Original Claim 11 discloses “the ink-jet transfer system according to claim 10, characterized in that the hot-melt layer contains or consists of a mixture a blend of an ethylene acrylic acid copolymer and polyester particles of a granular size of less than or equal to 20  $\mu\text{m}$ .

Page 14, lines 17-24 discloses “The hot-melt layer preferably used as adhesive layer in contrast to the highly porous pigment, binder as well as the background layer, is essentially wax-like, i.e. it can be fused. Usually, hot-melts melt in a range of about 100-120°C while the highly porous pigments preferably melt in a range of 120-180°C, preferably 140-160°C. A usual hot-melt is for instance an ethylene acrylic acid copolymer dispersion.

Page 5, lines 24-37 and Page 6 lines 1-30 generally disclose an adhesive layer contacting the carrier material.

Page 5, lines 24-28 discloses an adhesive layer applied on the background layer preferably a hot melt layer which comprises dispersed spherical (globular) polyester particles of granular size of less than 30  $\mu\text{m}$ .

Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily affects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30  $\mu\text{m}$  are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer.

Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.

Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic



<p>(d) the adhesive layer having an EAA resin or polymer including one or more pigments providing an opaque background for an image received at least by the ink receiving layer; and</p>	<p>presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>(d) the adhesive layer having an EAA resin or polymer including one or more pigments providing an opaque background for an image received at least by the ink receiving layer</p> <p>Page 5, lines 28-35 discloses a white background layer being applied on the adhesive layer and at least on ink-receiving layer being applied on the background layer. The white background layer, which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperature non-fusible (i.e. up to about 220° C) permanently elastic plastics, filled with white also non-fusible pigments.</p> <p>Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot—melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.</p> <p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% Ti<sub>2</sub> is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p>
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<p>(e) a carrier material having silicone; and</p> <p>(f) wherein the carrier material is separable from the ink-receiving layer and the adhesive layer having an EAA resin or polymer.</p>	<p>(e) a carrier material having silicone  Page 5, line 24 defines a carrier material as a base layer.  Page 14, line 11 defines a carrier layer as baking paper.  Page 15, line 8 defines a carrier material as “for instance silicon paper”.  Page 16, lines 13-15 define the carrier material as “a silicon paper of a layer thickness of about 0.1 mm”.  Claim 12 defines the carrier material “which consists of a heat-resistant separating paper, preferably silicon paper.”</p> <p>(f) wherein the carrier material is separable from the ink-receiving layer and the adhesive layer having an EAA resin or polymer.  Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.  Page 14, lines 3-16 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as the adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer</p>
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<p>93. (a) A method for enabling transfer of an image to a dark substrate or paper, the method comprising:</p> <p>(b) providing a transfer print comprising</p> <p>(i) a carrier material,</p>	<p>on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>The hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back ground layer. Said transfer is, for instance, effected by a cold copy, i.e. by iron pressing, cooling down and re-moving the carrier layer (baking paper). During the iron pressing, the hot-melt layer and the ink-receiving layer, but not the white background layer are molten. This way, the image imprinted on the ink-receiving layer is transferred on the textile substrate without any fusing associated distortions.</p> <p>93. (a) A method for enabling transfer of an image to a dark substrate or paper, the method comprising:</p> <p>Page 17, Lines 15-32 generally describes a method for transferring an image to a T-shirt.</p> <p>(b) providing a transfer print comprising</p> <p>Page 17, Line 25 provides a transfer print which has been obtained generally according to Example 1, Page 16, Lines 9-37 and Page 17, Lines 1-13.</p> <p>(i) a carrier material</p> <p>Page 5, line 24 defines a carrier material as a base layer.</p> <p>Page 14, line 11 defines a carrier layer as baking paper.</p> <p>Page 15, line 8 defines a carrier material as “for instance silicon paper”.</p> <p>Page 16, lines 13-15 define the carrier material as “a silicon paper of a layer thickness of about 0.1 mm”.</p> <p>Claim 12 defines the carrier material “which consists of a heat-resistant</p>
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<p>(ii) and an ink-receiving layer comprising at least one polymer and an ink-receptive coating,</p>	<p>separating paper, preferably silicon paper.”</p> <p>(ii) and an ink-receiving layer comprising at least one polymer and an ink-receptive coating</p> <p>Page 5, lines 29-30 discloses at least one ink-receiving layer being applied on the white background layer.</p> <p>Page 7, lines 5-10 discloses “there occurs no repellent or detachment, respectively...from the ink-receiving layer from the white background layer.”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally discloses an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff</p>
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<p>(c) wherein the carrier material is peelable from the ink-receiving layer and positionable over the ink-receiving layer;</p>	<p>molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>Page 12, lines 1-37 and Page 13, lines 1-36 provide additional disclosure regarding the ink-receiving layer.</p> <p>(c) wherein the carrier material is peelable from the ink-receiving layer and positionable over the ink-receiving layer</p> <p>Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat—resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>See above - “covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T—</p>
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<p>(d) wherein the ink-receiving layer is contactable to the dark substrate such that imparted image face away from the dark substrate;</p>	<p>shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds.”</p> <p>Page 14, lines 3-16 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as the adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer. The hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back ground layer. Said transfer is, for instance, effected by a cold copy, i.e. by iron pressing, cooling down and re-moving the carrier layer (baking paper). During the iron pressing, the hot-melt layer and the ink-receiving layer, but not the white background layer are molten. This way, the image imprinted on the ink-receiving layer is transferred on the textile substrate without any fusing associated distortions.</p> <p>(d) wherein the ink-receiving layer is contactable to the dark substrate such that imparted image face away from the dark substrate;</p> <p>Page 5, lines 22-31 discloses “the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer, which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied</p>
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<p>(e) wherein heat is applicable to the carrier material and the ink-receiving layer so that imparted image is transferable to the dark substrate.</p>	<p>on the background layer. The white background layer which is directly on the adhesive layer...”</p> <p>Page 9, lines 20-23 discloses the ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder.</p> <p>Page 17, lines 25-27 discloses “afterwards, the print is removed and put with the white side onto the desired side of the selected T-shirt...”</p> <p>Page 17, lines 25-32 discloses “afterwards, the print is removed and put with the white side onto the desired side of the selected T-shirt and iron pressed by means of a hot iron (baking paper + temperature of about 190°C) during 10 seconds. Afterwards, the T-shirt such processed is cooled down to about room temperature and the baking paper, i.e. the silicon paper is removed. The image such obtained is shining and matt.</p> <p>(e) wherein heat is applicable to the carrier material and the ink-receiving layer so that imparted image is transferable to the dark substrate.</p> <p>Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper)</p>
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<p>94. The method of claim 93, further comprising providing a cover layer positionable over the ink-receiving layer, in lieu of the carrier material, prior to the application of heat.</p>	<p>is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>Claim 16 discloses a method for printing textile substrates, characterized in that a graphic presentation is printed laterally correct by a computer via a printer on the ink-jet transfer system according to one of the Claims 1 to 13 and thereafter is hot iron pressed onto the textile substrate and that the carrier material is coldy removed after cooling down.</p> <p>Page 6, lines 15-23 The filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints.</p> <p>94. Page, 15, lines 28-36 and Page 16, lines 1-4 discloses "First, the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink—jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p>
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<p>95. (a) A method for making a transfer print, comprising:</p> <p>(b) obtaining a carrier material;</p> <p>(c) overlaying the carrier material with one or more polymers;</p> <p>(d) combining at least one of the one or more polymers with a white background layer comprising a titanium oxide or other white or luminescent pigment, thereby forming an opaque background;</p>	<p>95. (a) A method for making a transfer print, comprising: Page 16, lines 10-37 and Page 17 lines 1-13 generally discloses a method for making a transfer print.</p> <p>(b) obtaining a carrier material; Page 5, line 24 defines a carrier material as a base layer. Page 14, line 11 defines a carrier layer as baking paper. Page 15, line 8 defines a carrier material as “for instance silicon paper”. Page 16, lines 13-15 define the carrier material as “a silicon paper of a layer thickness of about 0.1 mm”. Claim 12 defines the carrier material “which consists of a heat-resistant separating paper, preferably silicon paper.”</p> <p>(c) overlaying the carrier material with one or more polymers Page 16, lines 13-15 define the carrier material as “a silicon paper of a layer thickness of about 0.1 mm”. Claim 12 defines the carrier material “which consists of a heat-resistant separating paper, preferably silicon paper.”</p> <p>(d) combining at least one of the one or more polymers with a white background layer comprising a titanium oxide or other white or luminescent pigment, thereby forming an opaque background Page 16, lines 25-31 discloses “on said elastic background layer of polyurethane/TiO<sub>2</sub> (white background layer), a dispersion containing the ink-receiving layer is applied in two steps. Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% Ti<sub>2</sub> is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive</p>
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<p>(c) overlaying the one or more polymers with an ink receiving layer;</p>	<p>layer)”</p> <p>(c) overlaying the one or more polymers with an ink receiving layer;</p> <p>Page 5, lines 29-30 discloses at least one ink-receiving layer being applied on the white background layer.</p> <p>Page 7, lines 5-10 discloses “there occurs no repellent or detachment, respectively...from the ink-receiving layer from the white background layer.”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally discloses an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the</p>
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<p>(f) wherein the carrier material, when peeled from the one or more polymers and the ink-receiving layer, or a cover layer is effective for covering an image comprising the image receivable by the ink-receiving layer and the opaque background; and</p>	<p>advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>Page 12, lines 1-37 and Page 13, lines 1-36 provide additional disclosure regarding the ink-receiving layer.</p> <p>(f) wherein the carrier material, when peeled from the one or more polymers and the ink-receiving layer, or a cover layer is effective for covering an image comprising the image receivable by the ink-receiving layer and the opaque background;</p> <p>Page 15, lines 28-37, Page 16 lines 1-4 discloses "First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>Page 14, lines 3-24 discloses a hot-</p>
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<p>(g) for transferring heat from a heat source to at least the ink-receiving layer and the one or more polymers.</p>	<p>melt layer (adhesive layer) which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink—jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>(g) for transferring heat from a heat source to at least the ink-receiving layer and the one or more polymers.</p> <p>Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>Claim 16 discloses a method for printing textile substrates, characterized in that a graphic presentation is printed laterally correct by a computer via a printer on the ink-jet transfer system according to one of the Claims 1 to 13 and thereafter is hot iron pressed onto the textile substrate and that the carrier material is coldy removed after cooling down.</p> <p>Page 6, lines 15-23 The filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must</p>
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<p>96. (a) A method for enabling transfer of an image to a dark substrate comprising textile or paper, the method comprising:</p> <p>(b) providing a transfer print comprising</p> <p>(i) a carrier material,</p> <p>(ii) an adhesive layer having resin and an ink-receiving layer configured to receive an image, wherein the carrier material is contactable to the adhesive layer having resin;</p>	<p>not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints.</p> <p>96. (a) A method for enabling transfer of an image to a dark substrate comprising textile or paper, the method comprising: Page 17, Lines 15-32 generally describes a method for transferring an image to a T-shirt.</p> <p>(b) providing a transfer print comprising Page 17, Line 25 provides a transfer print which has been obtained generally according to Example 1, Page 16, Lines 9-37 and Page 17, Lines 1-13.</p> <p>(i) a carrier material Page 5, line 24 defines a carrier material as a base layer. Page 14, line 11 defines a carrier layer as baking paper. Page 15, line 8 defines a carrier material as “for instance silicon paper”. Page 16, lines 13-15 define the carrier material as “a silicon paper of a layer thickness of about 0.1 mm”. Claim 12 defines the carrier material “which consists of a heat-resistant separating paper, preferably silicon paper.”</p> <p>(ii) an adhesive layer having resin and an ink-receiving layer configured to receive an image, wherein the carrier material is contactable to the adhesive layer having resin Page 5, lines 22-31 discloses “the ink-jet transfer system according to the present invention comprises or consists of,</p>
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respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30  $\mu\text{m}$ , a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer. The white background layer which is directly on the adhesive layer...”

Page 9, lines 20-37 and Page 10 lines 1-17 generally discloses an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the

advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.

Page 8, line 37 and Page 9, lines 1-2 discloses referring to the adhesive layer "a preferred hot-melt compound is for example an ethylene acrylic acid copolymer or a PU dispersion.

Page 14, lines 23-24 discloses "A usual hot-melt (adhesive layer) is for instance an ethylene acrylic acid copolymer dispersion.

Page 16, lines 12-20 discloses "In a first step, the hot-melt layer is applied onto a carrier material: Thereby, a silicon paper of a layer thickness of about 0.1 mm is coated with an ethylene acrylic acid copolymer comprising dispersed spherical polyester particles of a granular size of between 5-25  $\mu\text{m}$ . The ratio of ethylene acrylic acid copolymer and spherical polyester particles is about 60:40 and the resulting layer thickness of the hot-melt layer is about 30  $\mu\text{m}$ . Original Claim 11 discloses "the ink-jet transfer system according to claim 10, characterized in that the hot-melt layer contains or consists of a mixture a blend of an ethylene acrylic acid copolymer and polyester particles of a granular size of less than or equal to 20  $\mu\text{m}$ .

Page 5, lines 24-37 and Page 6 lines 1-30 generally discloses an adhesive and white background layer contacting the carrier material.

Page 5, lines 24-28 discloses an

adhesive layer applied on the carrier material preferably a hot melt layer which comprises dispersed spherical (globular) polyester particles of granular size of less than 30  $\mu\text{m}$ .

Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily effects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30  $\mu\text{m}$  are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer.

Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot-melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.

Page 14, lines 3-24 discloses a hot-



<p>(c) wherein the carrier material is peelable from the adhesive layer having resin and the ink-receiving layer and positionable over the adhesive layer having resin and the ink-receiving layer;</p>	<p>melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink—jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.</p> <p>(c) wherein the carrier material is peelable from the adhesive layer having resin and the ink-receiving layer and positionable over the adhesive layer having resin and the ink-receiving layer</p> <p>Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>See above - “covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds.”</p> <p>Page 14, lines 3-16 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as the adhesive layer is directly on the removable carrier</p>
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<p>(d) wherein the adhesive layer having resin is contactable to the dark substrate, such that receiving image face away from the dark substrate; and</p> <p>(e) wherein heat is applicable to the carrier material, the ink-receiving layer, and the adhesive</p>	<p>material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer. The hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back ground layer. Said transfer is, for instance, effected by a cold copy, i.e. by iron pressing, cooling down and removing the carrier layer (baking paper). During the iron pressing, the hot-melt layer and the ink-receiving layer, but not the white background layer are molten. This way, the image imprinted on the ink-receiving layer is transferred on the textile substrate without any fusing associated.</p> <p>(d) wherein the adhesive layer having resin is contactable to the dark substrate, such that receiving image face away from the dark substrate; and</p> <p>Page 17, lines 25-27 discloses “afterwards, the print is removed and put with the white side onto the desired side of the selected T-shirt...”</p> <p>Page 17, lines 25-32 discloses “afterwards, the print is removed and put with the white side onto the desired side of the selected T-shirt and iron pressed by means of a hot iron (baking paper + temperature of about 190°C) during 10 seconds. Afterwards, the T-shirt such processed is cooled down to about room temperature and the baking paper, i.e. the silicon paper is removed. The image such obtained is shining and matt.</p> <p>(e) wherein heat is applicable to the carrier material, the ink-receiving layer, and the</p>
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<p>layer having resin so that the image is transferable to the dark substrate.</p>	<p>adhesive layer having resin so that the image is transferable to the dark substrate.</p> <p>Page 15, lines 28-37, Page 16 lines 1-4 discloses "First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>See above - "covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds."</p> <p>Claim 16 discloses a method for printing textile substrates, characterized in that a graphic presentation is printed laterally correct by a computer via a printer on the ink-jet transfer system according to one of the Claims 1 to 13 and thereafter is hot iron pressed onto the textile substrate and that the carrier material is coldy removed after cooling down.</p> <p>Page 6, lines 15-23 The filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background</p>
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<p>97. (a) A method for making a transfer print, comprising:</p> <p>(b) obtaining a carrier material;</p> <p>(c) overlaying the carrier material with a polymer;</p> <p>(d) overlaying or underlaying the carrier material having a polymer with an adhesive layer having a resin;</p>	<p>colour would be associated which according to the invention shall be provided to provide a background for dark prints.</p> <p>97. (a) A method for making a transfer print, comprising: Page 16, lines 10-37 and Page 17 lines 1-13 generally discloses a method for making a transfer print.</p> <p>(b) obtaining a carrier material; Page 5, line 24 defines a carrier material as a base layer. Page 14, line 11 defines a carrier layer as baking paper. Page 15, line 8 defines a carrier material as “for instance silicon paper”. Page 16, lines 13-15 define the carrier material as “a silicon paper of a layer thickness of about 0.1 mm”. Claim 12 defines the carrier material “which consists of a heat-resistant separating paper, preferably silicon paper.”</p> <p>(c) overlaying the carrier material with a polymer Page 15, line 8 defines a carrier material as “for instance silicon paper”. Page 16, lines 13-15 define the carrier material as “a silicon paper of a layer thickness of about 0.1 mm”. Claim 12 defines the carrier material “which consists of a heat-resistant separating paper, preferably silicon paper.”</p> <p>(d) overlaying or underlaying the carrier material having a polymer with an adhesive layer having a resin Page 5, lines 22-31 discloses “the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer which comprises dispersed spherical (globular)</p>
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	<p>polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer. The white background layer which is directly on the adhesive layer...”</p> <p>Page 8, line 37 and Page 9, lines 1-2 discloses referring to the adhesive layer “a preferred hot-melt compound is for example an ethylene acrylic acid copolymer or a PU dispersion.</p> <p>Page 14, lines 23-24 discloses “A usual hot-melt (adhesive layer) is for instance an ethylene acrylic acid copolymer dispersion.</p> <p>Page 16, lines 12-20 discloses “In a first step, the hot-melt layer is applied onto a carrier material: Thereby, a silicon paper of a layer thickness of about 0.1 mm is coated with an ethylene acrylic acid copolymer comprising dispersed spherical polyester particles of a granular size of between 5-25 um. The ratio of ethylene acrylic acid copolymer and spherical polyester particles is about 60:40 and the resulting layer thickness of the hot-melt layer is about 30 um. Original Claim 11 discloses ”the ink-jet transfer system according to claim 10, characterized in that the hot-melt layer contains or consists of a mixture a blend of an ethylene acrylic acid copolymer and polyester particles of a granular size of less than or equal to 20 um.</p> <p>Page 5, lines 24-37 and Page 6 lines 1-30 generally discloses an adhesive and white background layer contacting the carrier material.</p> <p>Page 5, lines 24-28 discloses an adhesive layer applied on the carrier material preferably a hot melt layer which comprises dispersed spherical (globular) polyester particles of granular size of less than 30 um.</p> <p>Page 8, lines 9-37, discloses that the adhesive layer has to be essentially or</p>
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completely fusible and must only be adhesive in a fused condition. The adhesive layer, in one embodiment, is directly on the carrier material and is a pure hot-melt layer. The hot-melt layer is essentially a wax-like polymer. The hot-melt layer primarily effects the adhesion to the textile substrate. On the other hand, the hot-melt layer also has to mediate a good adhesion to the white background layer. This is inventively achieved in that in the hot-melt layer, very small spherical polyester particles of a granular size of less than 30  $\mu\text{m}$  are dispersed. These spherical polyester particles in turn are more chemically related to the white background layer (than the pure hot-melt wax components) so that during melting they can form or enhance, respectively, the adhesion to the white background layer.

Page 9, lines 6-19 discloses an adhesive layer, besides a pure hot—melt, also a hot-melt adhesive dissolved in a solvent can be used. For example a solvent comprising adhesive on the basis of polyamides or polyethylenes which on the one hand effects a good adhesion to the textile substrate and on the other hand to the background layer are suitable for the realization of the present invention. In a preferred embodiment, the adhesive layer, however, contains or consists of a pure hot-melt since said hot-melt forms the desired adhesion to the white background layer and to the textile substrate by means of a comparatively simple external controlling means, i.e. by means of iron pressing, in a convenient but efficient manner.

Page 14, lines 3-24 discloses a hot-melt layer which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an

<p>(e) combining at least one of carrier material with the polymer or the adhesive layer having resin with a white background layer having titanium oxide or other white pigment, thereby forming an opaque background; and</p>	<p>adhesion to the white back-ground layer.</p> <p>(e) combining at least one of carrier material with the polymer or the adhesive layer having resin with a white background layer having titanium oxide or other white pigment, thereby forming an opaque background; and</p> <p>Page 5, lines 28-31 discloses "...a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer. The white background layer which is directly on the adhesive layer..."</p> <p>Page 16, lines 25-31 discloses "on said elastic background layer of polyurethane/TiO<sub>2</sub> (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.</p> <p>Page 16, lines 21-24 discloses "subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% Ti)<sub>2</sub> is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)"</p> <p>Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non—fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white also (up to about 220°C) non-fusible pigments.</p> <p>Page 6, lines 31-34 discloses "Thus, the present invention succeeds in providing a transfer system which comprises a white back-ground layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...".</p> <p>Page 7, lines 6-8 discloses there occurs "no repellent or detachment,</p>
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respectively, of the white background layer from the adhesive layer...”.

Page 7, lines 11-17 discloses that the “...different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.

Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued to the textile substrate...

Page 16, lines 21-24 discloses “a white background layer (polyurethane foil) with a thickness of about 40 um containing about 1 weight-% TiO<sub>2</sub> is applied onto the silicon paper coated with the hot-melt.

Claim 8 discloses that the ink-jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.

Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO<sub>4</sub>, ZnS, TiO<sub>2</sub>, ZnO, SbO.

Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.

Page 6, lines 14-30, discloses the filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile



<p>(f) overlaying the carrier material having a polymer with the adhesive layer having resin;</p> <p>(g) wherein the carrier material, when peeled away from the polymer and the adhesive layer having the resin, or a cover layer is effective for covering an image receivable by the ink-receiving layer and the opaque background and for transferring heat from a heat source to at least the ink-receiving layer, the adhesive layer having resin, and the carrier material having polymer.</p>	<p>substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected from the group comprising BaSO<sub>4</sub>, ZnS, TiO<sub>2</sub>, ZnO, SbO. Also organic pigments are usable for the white background layer as far as they are non-fusible at iron pressing temperatures. These pigments can be blended alone or also in a mixture with other (up to 220°C) non-fusible carrier agents, as for example silicates or aluminates.</p> <p>(f) overlaying the carrier material having a polymer with the adhesive layer having a resin;</p> <p>Page 5, lines 22-31 discloses “the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer, which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer. The white background layer which is directly on the adhesive layer...”</p> <p>(g) wherein the carrier material, when peeled away from the polymer and the adhesive layer having the resin, or a cover layer is effective for covering an image receivable by the ink-receiving layer and the opaque background and for transferring heat from a heat source to at least the ink-receiving layer, the adhesive layer having resin, and the carrier material having the polymer.</p> <p>Page 14, lines 3-24 discloses a hot-</p>
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melt layer (adhesive layer) which is preferably used in the ink-jet transfer system according to the present invention as adhesive layer is directly on the removable carrier material and serves to transfer the graphic presentation imprinted by the ink-jet printer on the textile substrate and to ensure an adhesion to the white back-ground layer.

Page 15, lines 28-37, Page 16 lines 1-4 discloses "First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink—jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.

See above - "covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds."

Claim 16 discloses a method for printing textile substrates, characterized in that a graphic presentation is printed laterally correct by a computer via a printer on the ink-jet transfer system according to one of the Claims 1 to 13 and thereafter is hot iron pressed onto the textile substrate and that the carrier material is coldy removed after cooling down.

Page 6, lines 15-23 The filled white

<p>98. (New) The method of claim 91, further comprising imparting image to the ink receiving layer using at least one of a copying or printing process.</p> <p>99. (New) The method of claim 98, wherein one or both of the ink receiving layer or the adhesive layer having EAA resin includes a white background layer having titanium oxide or other white or luminescent pigment providing an opaque background for imparted image.</p>	<p>layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background colour would be associated which according to the invention shall be provided to provide a background for dark prints.</p> <p>98. Page 17, lines 9-11 discloses on the coating machine, the solvent is allowed to evaporate in order to obtain a solid ink-receiving layer on which the desired graphic presentation can be printed by means of an ink-jet printer.</p> <p>99. Page 5, lines 28-31 discloses ...a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer. The white background layer which is directly on the adhesive layer...”</p> <p>Page 16, lines 25-31 discloses “on said elastic background layer of polyurethane/TiO<sub>2</sub> (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.</p> <p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% Ti<sub>2</sub> is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally disclose an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one</p>
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	<p>hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly</p>
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on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non—fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white also (up to about 220°C) non-fusible pigments.

Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white back-ground layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...”.

Page 7, lines 6-8 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer...”.

Page 7, lines 11-17 discloses that the “...different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.

Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued to the textile substrate...

Page 16, lines 21-24 discloses “a white background layer (polyurethane foil) with a thickness of about 40 um containing about 1 weight-% TiO<sub>2</sub> is applied onto the silicon paper coated with the hot-melt.

Claim 8 discloses that the ink-jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.

Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO<sub>4</sub>, ZnS, TiO<sub>2</sub>, ZnO, SbO.

<p>100. (New) The method of claim 99, wherein applying at least the non-peeled portions of the transfer print to the textile includes simultaneously applying an image comprising imparted image and the opaque background to the textile.</p>	<p>Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.</p> <p>Page 6, lines 14-30, discloses the filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected from the group comprising BaSO<sub>4</sub>, ZnS, TiO<sub>2</sub>, ZnO, SbO. Also organic pigments are usable for the white background layer as far as they are non—fusible at iron pressing temperatures. These pigments can be blended alone or also in a mixture with other (up to 220°C) non-fusible carrier agents, as for example silicates or aluminates.</p> <p>100. Page 15, lines 28-37, Page 16 lines 1-4 discloses “First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded</p>
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<p>101. (New) The method of claim 91, wherein the transfer print further comprises a white background layer disposed between the ink receiving layer and the adhesive layer having EAA resin or between the adhesive layer having EAA resin and the carrier material having silicone.</p> <p>102. (New) The method of claim 93, wherein the ink-receiving layer comprises a white background layer having a white or luminescent pigment that provides an opaque background for imparted image.</p> <p>103. (New) The method of claim 102, wherein an adhesive layer having an EAA polymer comprises a white background layer having a white or luminescent pigment and provides the opaque background for imparted image.</p>	<p>before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>101. Page 5, lines 22-31 discloses “the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the (white) background layer. The white background layer which is directly on the adhesive layer...”</p> <p>Page 9, lines 20-23 discloses the ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder.</p> <p>Page 6, lines 31-35 discloses the present invention succeeds in providing a transfer system which comprises a white background layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...</p> <p>102. Page 9, lines 20-23 discloses the ink—receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder.</p> <p>103. Page 5, lines 22-31 discloses “the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer — which comprises dispersed spherical</p>
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<p>104. (New) The method of claim 102, wherein a polymeric white layer of the ink-receiving layer comprises the white or luminescent pigment and provides the opaque background for imparted image.</p>	<p>(globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the (white) background layer. The white background layer which is directly on the adhesive layer...”</p> <p>Page 8, line 37 and Page 9, lines 1-2 discloses referring to the adhesive layer “a preferred hot-melt compound is for example an ethylene acrylic acid copolymer or a PU dispersion.</p> <p>Page 14, lines 23-24 discloses “A usual hot-melt (adhesive layer) is for instance an ethylene acrylic acid copolymer dispersion.</p> <p>104. Page 5, lines 28-31 discloses ...a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the (white) background layer.</p> <p>Page 16, lines 25-31 discloses “on said elastic background layer of polyurethane/TiO<sub>2</sub> (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.</p> <p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% Ti<sub>2</sub> is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally disclose an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability.</p>
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	<p>Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non-fusible (i.e. up to about 220°C) permanently elastic</p>
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	<p>plastics, filled with white also (up to about 220°C) non-fusible pigments.</p> <p>Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white back-ground layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...”.</p> <p>Page 7, lines 6-8 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer...”.</p> <p>Page 7, lines 11-17 discloses that the “...different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.</p> <p>Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued to the textile substrate...</p> <p>Page 16, lines 21-24 discloses “a white background layer (polyurethane foil) with a thickness of about 40 um containing about 1 weight-% TiO<sub>2</sub> is applied onto the silicon paper coated with the hot-melt.</p> <p>Claim 8 discloses that the ink-jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.</p> <p>Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO<sub>4</sub>, ZnS, TiO<sub>2</sub>, ZnO, SbO.</p> <p>Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes,</p>
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<p>105. (New) The method of claim 102, wherein the ink receptive coating of the ink-receiving layer comprises the white or luminescent pigment and provides the opaque background for imparted image.</p>	<p>polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.</p> <p>Page 6, lines 14-30, discloses the filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected from the group comprising BaSO<sub>4</sub>, ZnS, TiO<sub>2</sub>, ZnO, SbO. Also organic pigments are usable for the white background layer as far as they are non—fusible at iron pressing temperatures. These pigments can be blended alone or also in a mixture with other (up to 220°C) non—fusible carrier agents, as for example silicates or aluminates.</p> <p>105. Page 5, lines 28-31 discloses ...a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the (white) background layer.</p> <p>Page 16, lines 25-31 discloses “on said elastic background layer of polyurethane/TiO<sub>2</sub> (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.</p> <p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40µm containing about 15 weight-% TiO<sub>2</sub> is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally disclose an ink-</p>
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receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink—receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot—melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups

of the dyestuff molecules of the ink.

Page 5, lines 28-35 discloses a white background layer is applied on the adhesive layer. The white background layer is directly on the adhesive layer. The white background layer which is directly on the adhesive layer, according to the present invention, comprises or consists of at iron pressing temperatures non-fusible (i.e. up to about 220°C) permanently elastic plastics, filled with white also (up to about 220°C) non-fusible pigments.

Page 6, lines 31-34 discloses “Thus, the present invention succeeds in providing a transfer system which comprises a white back-ground layer in the print system itself, i.e. between the adhesive layer and the ink-receiving layer ...”.

Page 7, lines 6-8 discloses there occurs “no repellent or detachment, respectively, of the white background layer from the adhesive layer...”.

Page 7, lines 11-17 discloses that the “...different layers show a good adhesion to each other after production of the transfer system so that there is no splintering off, or detachment, respectively, of single layers of the transfer system that is pressed on the textile substrate”.

Page 8, lines 1-3 discloses a glued lamellar structure, or sandwich structure, in which the white background layer is glued to the textile substrate...

Page 16, lines 21-24 discloses “a white background layer (polyurethane foil) with a thickness of about 40 um containing about 1 weight-% TiO<sub>2</sub> is applied onto the silicon paper coated with the hot-melt.

Claim 8 discloses that the ink-jet transfer system according to one of the claims 1 to 7, characterized in that the elastic plastics of the white background layer are selected from the group comprising polyurethanes, polyacrylates, polyalkylenes, particularly preferred polyurethanes.

<p>106. (New) The method of claim 95, wherein overlaying the carrier material with one or more polymers includes overlaying the carrier material with at least one of an acrylic, EAA, SBR, EVA, PVOH, polyurethane, MEAA, polyamide, PVP, EAA, acrylonitrile, butadiene, or styrene material.</p>	<p>Claim 9 discloses the ink-jet transfer system according to one of the claims 1 to 8, characterized in that the pigments in the white background layer are selected from the group comprising BaSO<sub>4</sub>, ZnS, TiO<sub>2</sub>, ZnO, SbO.</p> <p>Page 6, lines 9-13 discloses preferred elastic plastics for the white background layer are selected from the group comprising the polyurethanes, polyacrylates, or polyalkylenes, or also natural rubber (latex), respectively. The most preferred elastic plastics contain or consist of polyurethanes.</p> <p>Page 6, lines 14-30, discloses the filled white layer or the polymers contained therein, respectively, such e.g. polyurethane must not melt, because otherwise the white pigments sink or penetrate, respectively, into the textile substrate. With this, a reduction or even a destruction, respectively, of the white background color would be associated which according to the invention shall be provided to provide a background for dark prints. Particularly preferred white pigments are inorganic pigments selected from the group comprising BaSO<sub>4</sub>, ZnS, TiO<sub>2</sub>, ZnO, SbO. Also organic pigments are usable for the white background layer as far as they are non-fusible at iron pressing temperatures. These pigments can be blended alone or also in a mixture with other (up to 220°C) non-fusible carrier agents, as for example silicates or aluminates.</p> <p>106. Page 5, lines 22-31 discloses “the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 µm, a white background layer</p>
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being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer. The white background layer which is directly on the adhesive layer...”

Page 16, lines 25-31 discloses “on said elastic background layer of polyurethane/TiO<sub>2</sub> (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.

Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% Ti<sub>2</sub> is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”

Page 9, lines 20-37 and Page 10 lines 1-17 generally disclose an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more

<p>107. (New) The method of claim 95, wherein overlaying the carrier material with one or more polymers includes overlaying the carrier material with a polymeric white background layer and an adhesive layer having EAA resin.</p>	<p>preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>107. Page 8, line 37 and Page 9, lines 1-2 discloses referring to the adhesive layer “a preferred hot-melt compound is for example an ethylene acrylic acid copolymer or a PU dispersion.</p> <p>Page 14, lines 23-24 discloses “A usual hot-melt (adhesive layer) is for instance an ethylene acrylic acid copolymer dispersion.</p> <p>Page 5, lines 22-31 discloses “the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer. The white background layer which is directly on the adhesive layer...”</p> <p>Page 16, lines 25-31 discloses “on said elastic background layer of</p>
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	<p>polyurethane/TiO<sub>2</sub> (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.</p> <p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% Ti<sub>2</sub> is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p> <p>Page 9, lines 20-37 and Page 10 lines 1-17 generally disclose an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs,</p>
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<p>108. (New) The method of claim 96, further comprising providing a cover layer positionable over the ink-receiving layer and the adhesive layer having resin, in lieu of the carrier material, prior to the application of heat.</p> <p>109. (New) The method of claim 96, wherein the ink-receiving layer includes at least one of low density polyethylene, ethylene acid, or nylon.</p>	<p>after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>108. Page 15, lines 28-37, Page 16 lines 1-4 discloses "First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper (cover layer) and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>109. Page 9, lines 20-37 and Page 10 lines 1-17 generally disclose an ink-receiving layer that comprises a polymer that includes indicia. The ink-receiving layer (ink layer) is situated on the white background layer and primarily comprises a highly porous pigment and a binder. The highly porous pigment provides on the one hand a pure mechanical receipt of the ink during printing of the desired graphic</p>
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<p>110. (New) The method of claim 97, wherein the ink receiving layer includes a melt temperature of about 20 degrees C to about 225 degrees C.</p>	<p>presentation whereby a maximal porosity ensures an especially high absorbability. Binders are necessary to bind the highly porous pigments on the product surface to allow the processing (imprinting) of the ink-jet transfer system. In principle, all known, mainly highly porous pigments, are suitable as ink-receiving layer for the purposes of the present invention: Examples are polyesters, PE-wax, PE-powders, ethylene-VAC-copolymers, nylon, epoxy compounds. As binders are suitable polyacrylates, styrol-butadiene-copolymers, ethylene-VAC-copolymers, nylon, nitrile rubber, PVC, PVAC, ethylene-acrylate-copolymers. Preferably the at least one ink-receiving layer comprises a mixture of a highly porous pigment and a binder whereby more preferably the molecules of the highly porous pigment and optionally of the binder and optionally of the adhesive layer, e.g. the hot-melt layer, are capable to form, essentially covalent, bonds to the dyestuff molecules of the ink. This has the advantage that the respective dyestuffs, after the printing on the textile substrate, for instance by iron pressing, are not anymore primarily mechanically bonded, but as a result of essentially covalent bonds are chemically bonded to the molecules of the pigment and the binder and optionally the hot-melt. This is achieved in that the molecules of the pigment and optionally of the binder and optionally of the hot-melt dispose of reactive groups that are capable to form covalent bonds to the also reactive groups of the dyestuff molecules of the ink.</p> <p>110. Page 15, lines 28-37, Page 16 lines 1-4 discloses "First the graphic presentation to be applied onto the textile substrate is laterally correctly printed onto the ink-jet transfer system such obtained by a usual printer, e.g. an ink-jet printer (ink-</p>
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<p>111. (New) The method of claim 97, wherein the carrier material having polymer comprises a white background layer and the adhesive layer having resin includes EAA.</p>	<p>jet-plotter), cut out, removed from the support (carrier material) (e.g. silicon paper), covered with baking paper (cover layer) and afterwards iron pressed onto the desired textile substrate, for instance a T-shirt, at a temperature of between about 160 and 220°C, preferably of 170°C, during at least 10 seconds. The lowest layer is the carrier material, which is removed and discarded before the application of the graphic presentation. As the preferred cover paper, a heat-resistant silicon paper (baking paper) is used. The printed graphic presentation obtained in such a way (cold copy) is smooth and faint.</p> <p>111. Page 5, lines 22-31 discloses “the ink-jet transfer system according to the present invention comprises or consists of, respectively, a carrier material (base layer), an adhesive layer applied on the carrier material preferably a hot-melt layer which comprises dispersed spherical (globular) polyester particles of a granular size of less than 30 um, a white background layer being applied on the adhesive layer and at least one ink-receiving layer being applied on the background layer. The white background layer which is directly on the adhesive layer...”</p> <p>Page 16, lines 25-31 discloses “on said elastic background layer of polyurethane/TiO<sub>2</sub> (white background layer), a dispersion containing the ink-receiving layer is applied in two steps.</p> <p>Page 16, lines 21-24 discloses “subsequently, a white background layer (polyurethane foil) with a thickness of about 40um containing about 15 weight-% Ti<sub>2</sub> is applied on the silicon paper (carrier material) coated with a hot-melt(adhesive layer)”</p> <p>Page 8, line 37 and Page 9, lines 1-2 discloses referring to the adhesive layer “a preferred hot-melt compound is for example an ethylene acrylic acid</p>
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	copolymer or a PU dispersion.
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Accordingly, Claims 1-111 are pending in the application and are believed to be in condition for allowance.

V. CONCLUSION

Applicant submits that the present application is now ready for examination on the merits.

The USPTO is authorized to charge any additional fees incurred as a result of the filing hereof or credit any overpayment to our account #02-0900.

Respectfully submitted,

/daniel j. holmander/

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Daniel J. Holmander, Esq.  
USPTO Reg. No. 59,518

Barlow, Josephs & Holmes Ltd.  
101 Dyer Street, 5<sup>th</sup> Floor  
Providence, RI 02903  
401-273-4446 (tel)